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OFFICIAL MISCONDUCT, EXONEREE RACE, AND THE LENGTH OF TIME FROM FALSE CONVICTION TO EXONERATION

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ABSTRACT

We investigated the interaction of official misconduct (OM) committed by criminal justice officials and race of the defendant in the context of the length of time from conviction to exoneration. We included in our study cases from 1989 to 2020 from the *National Registry of Exonerations* (NRE), which compiles in its database exonerations accomplished both with and without DNA evidence. Analysis revealed that there does exist an interaction effect of OM and race of the defendant. The timeframe from conviction to exoneration was longest when the case involved both OM and a Black exoneree. Our results indicate that official misconduct and exoneree race, as well as the interaction of these two variables, are important factors in the exoneration timeframe.

Keywords: exoneration, false conviction, National Registry of Exonerations (NRE), official misconduct (OM), race

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Exoneration is court-declared innocence of individuals previously found guilty of a crime. Importantly, exoneration occurs after a person has been convicted and usually results from newfound evidence that substantiates innocence (Gross & Shaffer, 2012). Often, this new evidence is DNA evidence (Marshall, 2002). There is no certainty that a factually innocent but legally guilty individual will be exonerated, and even for those individuals who are eventually exonerated, evidence suggest that there is usually at least a decade between the time of arrest and a legal declaration of innocence (Meterko, 2016). Furthermore, these individuals will face difficulty after exoneration, as society stigmatizes them on the basis of their prior conviction—despite the fact that this conviction has been legally overturned (Howard, 2019). The frequency with which exonerations occur provides hard-lined evidence that the criminal justice system is fallible, finding innocent defendants guilty. Unfortunately, these false convictions are common (Cheng, 2005; Meterko, 2016).

GENERAL HISTORY AND EXTENT OF THE PROBLEM

Historically, evidence was considered most reliable immediately after a crime had occurred. Eyewitness testimony and memory carry with them expiration dates of sorts (Cheng, 2005). Post-event information or exposure to stimuli, such as pictures and other witnesses, can alter memory, and Ebbinghaus demonstrated that memory retention decreases as a function of time (Greene & Heilbrun 2014). Prior to digital storage, written accounts and records were not necessarily safe for long periods of time, and their completeness could not always be ensured. The principle of finality of the law has intended to safeguard against the use of evidence that has potentially decayed, as well as to circumvent the difficulties (e.g., missing documents) involved in reviewing very old cases long after the crime has occurred. Similarly, the statute of limitations exists under the pretense that after a certain length of time, it becomes difficult or impossible to conduct a fair trial where the evidence may have become stale (Cheng, 2005; Meterko, 2016). But not all evidence is necessarily time sensitive.

The advent of DNA evidence has challenged historical precedence. Unlike other forms of evidence, DNA evidence can be reliable in the long-term. In the context of exoneration, DNA has been used to establish innocence years after a crime has occurred. It is DNA evidence that first exposed the major problem that is false convictions within the criminal justice system (Cheng, 2005; Meterko, 2016).

Between 1989 and 2012, *at least* 873 individuals were exonerated. This number is largely believed to be a gross underrepresentation of the actual number of exonerations that have taken place. This may be due to the fact that for crimes less serious than murder or rape, there is less news coverage and less Innocence Project involvement (Gross & Shaffer, 2012). Meanwhile, the total number of exonerations is also believed to underrepresent the true number of all false convictions (Marshall, 2002). Many of those falsely convicted are never exonerated, due to a lack of DNA evidence. Lack of willing help from lawyers is also a factor contributing to factually innocent persons never being exonerated. Indeed, the difficulties contributed by vague legal rules and the ramifications of post-conviction retrials, especially those involving new evidence, make exonerations difficult and time consuming (Berger, 2006).

FACTORS CONTRIBUTING TO FALSE CONVICTION AND EXONERATION

Research has exposed a number of factors that contribute to false conviction and the subsequent likeliness of exoneration, by using cases in which verifiable exonerations have occurred. Exoneration databases, while not necessarily complete (Covey, 2013), offer accessible samples of individuals falsely convicted. Of the factors examined, ill-defense, on the part of the legal defense team, stands out as substantially increasing the risk of false conviction (Hessick, 2017; Rafail & Mahoney, 2019). Maybe counterintuitive to the average person's belief, errors in forensic analysis also contribute to false convictions. Specifically, fingerprinting practices have been found to exhibit an unacceptable level of human error, and simple blood testing is far from definitive. As such, these methods should not be considered end-all, reliable means for accurate identification of perpetrators (Gould & Leo, 2010).

Kassin et al. (2012) relied on data from the Innocence Project to examine the extent to which confessions correlate with errors in the conviction process. They found that not only were cases involving confessions also more likely to involve other errors, but the confessions were more likely to precede forensic science errors. This temporal ordering is suggests that false confessions may precipitate errors in other forms of evidence.

Time is also an important factor. Saber et al. (2021) used data from the NRE to explore a number of variables that might increase the chances of a DNA exoneration occurring. Within their models, DNA exonerations were less likely to come from recent cases. The authors reason that this could be the result of better forensic analysis prior to conviction.

OM, which is defined as the misuse of power on the part of criminal justice officials (e.g., police, prosecutors) (University of California Irvine Newkirk Center for Science & Society et al., 2020), is also an important contributing factor to false convictions and the later likelihood of exoneration (Covey, 2013; Gould & Leo, 2010; Rafail & Mahoney, 2019). This is one factor to be examined by the present study.

Finally, race of the defendant is a major factor. Black men appear to comprise a large percentage of all exonerees—a much higher percentage than would be expected based upon the percentage that this cohort contributes to all incarcerated individuals. In other words, Black men appear to be falsely convicted more often than individuals of other races (Smith & Hattery, 2011). It also takes more time for a Black individual who is falsely convicted to be exonerated (Rafail & Mahoney, 2018). Furthermore, Black exonerees face more stigmatization following their exoneration than do White exonerees (Howard, 2019). However, Saber et al. (2021) found that being Black did not increase the likelihood of a DNA exoneration occurring. This result is surprising given the mounting evidence within the literature that Black defendants have increased chances of poor outcomes.

While many factors contribute to false conviction and the subsequent likelihood of exoneration, of interest to the current study are two factors in particular. These are OM and race of the exoneree.

THE CURRENT STUDY

The purpose of the current study is to examine the interacting effect of OM and exoneree race on the length of time between false conviction and exoneration. Rafail and Mahoney (2019), in a pioneering study, examined "exoneration as a temporal process" (p. 538) by conceptualizing exoneration as a timeframe with a measurable time component. They found that the presence of OM in a case predicted a reduced likelihood of exoneration at any point along the timeline. They also found that it took Black individuals longer to be exonerated than White individuals or individuals of any other race. In the present study, we expand on the work of Rafail and Mahoney to further examine these two variables.

We hypothesize there to be an interaction effect between the variables of OM and race. Specifically, we expect those cases involving both OM and a Black exoneree to have the longest timeframe between conviction and exoneration and those cases involving no OM and a White exoneree to have the shortest timeframe between conviction and exoneration.

DATA AND METHODS

It is challenging to gather data concerning false convictions since a conviction cannot be known as having been false until after an exoneration has taken place. For this reason, a common practice is to use data from publicly available exoneration databases (Covey, 2013; Kassin et al. 2012; Saber et al. 2021). One example is the Innocence Project exoneration database. However, this database only includes exonerations accomplished by DNA evidence. The current study utilized data compiled in the NRE (University of California Irvine Newkirk Center for Science & Society et al., 2020). The NRE compiles information from every known exoneration since 1989 (Rafail & Mahoney, 2019), and also includes exonerations that have been accomplished without the use of DNA evidence (Meterko, 2016). The current study is concerned with false convictions, and so it was important that we use the more inclusive database, so as to make our findings as generalizable to all false convictions as possible.

For our analysis, we included exonerations dating from January 9, 1989 to October 1, 2020. We dismissed any cases coming from federal military courts (n = 6), Puerto Rico (n = 6), and Guam (n = 1), in an attempt to represent only those false convictions within the United States. We elected to include federal court cases, as they too represent false convictions within the United States. After these omissions, we were left with a total of 2665 cases for inclusion in our study. For the exonerees included in our analysis, the majority (n = 2428) were listed as male, but some (n = 237) as female. The earliest date of original conviction was 1956 and the most recent was 2020.

VARIABLES AND MEASUREMENT

The NRE includes information that categorizes the exoneration entries, such as by the type of crime involved in each case or the presence of inadequate legal defense at the time of conviction. These categorizations can function as categorical variables when analyzing the dataset. A few of these categorizations are of particular interest to the current study. OM is defined in the NRE coding manual as the significant abuse of power by criminal justice officials, which may have impacted the adjudication process. Criminal justice officials defined here include both police and prosecutors, as well as other officials involved in the case but exclude defense attorneys (University of California Irvine Newkirk Center for Science & Society et al., 2020).

We also examined race of the exoneree, which we divided into three levels. These were Black (n = 1324) White (n = 976), and All Other Races (n = 365). The dataset categories *Hispanic, Native American, Asian,* and *other* constituted our All Other Races group. Since these dataset categories included relatively few exonerees, we combined them into one group for analytical purposes.

We operationally defined our dependent variable (length of time from conviction to exoneration) by finding the difference between the date of exoneration and the date of conviction, using the SPSS date arithmetic function, giving us a continuous measure in years.

Since the data included in our study was found to violate the assumptions necessary to approach the analysis with a parametric test (i.e., the assumptions of normality and homogeneity of variance were violated), and in keeping with the strategies of Rafail & Mahoney (2019), we elected to perform a survival analysis on the dataset. Specifically, we approached analysis with a cox regression. This approach does not require the assumptions that fully parametric tests do. However, hazard ratios are assumed to be proportional over time (Bradburn et al., 2003a; Bradburn et al., 2003b). To check this assumption, we opted for the time-varying cox regression model provided in SPSS. To this end, our results will be given as hazard ratios. In this context, a hazard ratio greater than one indicates higher probability of exoneration than a hazard ratio less than one. One group is used as a reference for the other groups, in terms of hazard ratios. How this is conceptualized in the context of the present study will be detailed below in the results section below.

In order to make the interaction of OM and race easily interpretable within the context of survival analysis, we combined OM and race into a single variable. This approach, while perhaps unconventional, allowed us to easily compare the hazard ratios from one group to another while probing for an interaction effect. Thus, the groups within the levels of our independent variable were Black with no OM present (n = 564), Black with OM present (n = 760), White with no OM present (n = 480), White with OM present (496), All Other Races with no OM present (n = 175), and All Other Races with OM present (n = 190).

RESULTS

The omnibus test of the time-varying cox regression revealed an overall significant effect (χ^2 = 226.055, df = 5, $p < .05$) within the model. Further, several of the individual groups showed significant effects. The Black and no OM present group was set as the reference within the test. Specifically, when compared to the Black and no OM present group, the Black and OM present group (HR = 0.458, $Wald$ = 71.498, df = 1, $p < 0.05$) and the White and OM present group (HR = 0.725, $Wald$ = 11.029, df = 1, $p < 0.05$) had a lower probability of being exonerated during the timeframe examined (i.e., hazard ratios less than 1). Meanwhile, the All Other Races and no OM present group (HR = 1.339, $Wald$ = 5.247, df = 1, $p < 0.05$) and the White and no OM present group (HR = 1.500, $Wald$ = 19.854, df = 1, $p < 0.05$) were more likely to be exonerated during the timeframe (i.e., hazard ratios greater than 1), when compared to the Black and no OM group. There was also a significant interaction effect with time noted, and so the above results should be interpreted with caution. Specifically, the Black and OM present group (HR = 1.025, $Wald$ = 14.207, df =1, $p < 0.05$) and the White and OM present group (HR = 1.016, $Wald$ = 4.843, df = 1, $p < 0.05$) showed significant interactions with the time variable. Full results of the time-varying cox survival regression can be found in Tables 1 and 2 of the Appendix, and the plot of cumulative survival over time for each of the six OM by race groups can be seen in Figure 1. This plot was derived from a simple cox regression without the time-varying component. As such this figure should be used only as a means to help illustrate how a survival analysis can be conceptualized in the context of this study.

DISCUSSION AND CONCLUSIONS

It has previously been established that cases involving OM result in a longer timeframe from conviction to exoneration (Covey, 2013; Rafail & Mahoney, 2019). The purpose of this study was to examine the interaction effect of OM and exoneree race on the length of time from conviction to exoneration, in order to gain a better understanding of the relationship between these variables. First and foremost, our data add to the general conclusion that both OM and race of the defendant are important factors within the context of false conviction, as well as in the likelihood and timing of exoneration.

However, the crux of our study involves the relationship between these two variables. We expected the effect of OM to appear racially biased, resulting in Black exonerees who have OM present in their cases to have the most negative hazard ratios, followed by exonerees of All Other Races, and then White exonerees. However, this was not exactly the case. While we did find a significant interaction of OM and race, adding OM to the survival model decreased the hazard ratio the most for Black exonerees, followed by White exonerees, and then exonerees of All Other Races (See Table 1). In other words, the presence of OM appears to be most problematic for Black exonerees and then White exonerees, while affecting the hazard ratios of exonerees of All Other Races the least. The nature of the interaction effect is surprising, as White exonerees had a reduced chance of exoneration at any time along the timeline compared with exonerees of All Other Races. However, there were far fewer individuals in the All Other Races group than in both the Black and White groups. Further, as mentioned above, we did note an interaction effect with respect to time. As such, our results must be interpreted with extreme caution.

In the context of our study, the hazard ratios for each group indicate the *risk* of the exoneration, compared with that of the Black with no OM present group. As this is a survival analysis, interpretation of these hazard ratios assumes that they remain proportional to each other over time (Bradburn et al., 2003b). As we examine our results, we must keep in mind that somewhere along the course of the timeline, the effect of OM and race of the exoneree is changing.

Despite being a limitation to the interpretation of our results, the seemingly time-varying effect of OM and race is interesting in its own right. It is beyond the scope of this study to examine the effect further, but the implications of such an effect are very important. One would hope any change over time regarding these factors is trending in the direction of equality, but that remains to be explored by future research.

We did not examine other potentially relevant variables, and so any explanation that might be made for our results will be purely speculative. Nonetheless, data reported by other researchers might offer some direction. While not reporting an interaction effect exactly like we noted here, Gross et al. (2017) describe a complex relationship between the race of the defendant, the race of the victim, OM, and the chances of false conviction. Specifically, Black defendants accused of murdering a White victim appear to have higher chances of being falsely convicted, compared to defendants of other races. These same researchers also report that exonerations involving Black individuals are more likely to involve OM than exonerations involving individuals of other races. Similarly, Smith and Hattery (2011) noted that the percentage of exonerations that involve Black individuals falsely convicted of killing White victims is higher than the percentage of murders that involve Black perpetrators and White victims. No doubt there are deep racial biases underlying these effects.

There are at least a few limitations to the present study that deserve further mention. The first involves the choice of variables. It made sense to only include exoneree race and OM in this analysis, since our focus was on their interaction. However, other variables, such as the age of the defendant and the county in which the conviction occurred, have been shown to be important factors (Rafail & Mahoney, 2019). Similarly, the race of the victim is important (Gross et al., 2012; Smith & Hattery, 2011). Examining variables such as these may have helped to explain some of the unexpected results that we saw regarding the interaction between race and OM.

Another limitation involves our analytical strategy. Exoneration data provides the opportunity to study the effects of false conviction, yet the nature of the data itself can make analysis difficult. In the context of the present study, parametric tests were not appropriate, and so a survival analysis was a logical approach. Given that all individuals in the dataset have undergone the same event (i.e., exoneration) and that this event and the timing involved is central to the research questions examined using this dataset, survival analyses serve as very appropriate tools. However, the results of these tests can be difficult to conceptualize. As such, we elected to merge OM and exoneree race together into levels of a single variable, so as to directly compare hazard ratios in the context of an interaction between OM and exoneree race. Had we kept these two variables separate, it would have been difficult to probe individual interactions between levels. Since both variables were categorical and this organization makes conceptual sense, our strategy is perhaps less problematic than might seem on the surface. Nevertheless, the results of our analysis must be approached with caution.

The literature discussing false conviction and exoneration is very limited (Rafail & Mahoney, 2019; Smith & Hattery, 2011), despite the fact that it is now well established that false convictions do occur, and occur rather frequently (Berger, 2006; Hessick, 2017). The next step is to fill the void with abundant research citing the factors that contribute to these atrocities of justice, so as to give criminal justice officials and scholars of the law research-based evidence indicating where changes should be made within the system.

Finally, it appears that only by chance do some individuals who are wrongly convicted ever become exonerated (e.g., a confession by the actual perpetrator surfaces) (Berger, 2006; Meterko, 2016). As such, innumerable falsely convicted individuals will never be exonerated (Marshall, 2002). Our data adds to the body of research charging the criminal justice system with systematically finding innocent defendants guilty, as well as systematically barring falsely convicted individuals from being exonerated. Hessick (2017) argues that it is the conduct of the professionals in the criminal justice system that will need to be reformed in order to address the problem of false conviction. It is of paramount importance that further research continues to examine these issues, offering insight and advocating for reform.

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Table 1

Omnibus Tests of Model Coefficients

-2 Log Likelihood	Overall (Score)			Change from Previous Step			Change from Previous Block
	Chi-square	df	Sig.	Chi-square	df	Sig.	Chi-square
36717.225	258.565	10	.000	36.227	5	.000	36.227

Table 2

Variables in the Regression Equation

	B	SE	Wald	df	Sig.	Exp(B)
Race and OM			183.419	5	.000	
Black and OM	-.781	.092	71.498	1	.000	.458
All Other Races and No OM	.292	.127	5.246	1	.022	1.339
All Other Races and OM	-.074	.132	.316	1	.574	.928
White and No OM	.406	.091	19.845	1	.000	1.500
White and OM	-.322	.097	11.029	1	.001	.725
Race and OM by Time			33.918	5	.000	
Black and OM*Time	.024	.006	14.207	1	.000	1.025
All Other Races and No OM*Time	-.004	.012	.137	1	.711	.996
All Other Races and OM*Time	.013	.011	1.440	1	.230	1.013
White and No OM*Time	-.015	.008	3.551	1	.060	.985
White and OM*Time	.016	.007	4.843	1	.028	1.016

Figure 1 *Note that this plot was derived from a cox-regression without the time-varying component, for illustrative purposes.*